URS

VP Electromagnetic Spectrum Ops, URS
16 December 2011

The Impact of Operational Spectrum Management in Battle: Today and in the Future

Radio Controlled IEDs - the #1 cause of KIAs in OIF

HEADQUARTERS
MULTI-NATIONAL CORPS-IRAQ
BAGHDAD, IRAQ
APO AE 09342

REPLY TO ATTENTION OF

April 26, 2006

Commanding General

Admiral Michael G. Mullen
Chief of Naval Operations
2000 Navy Pentagon
Washington, DC 20350-2000

Dear Admiral Mullen:

I would like to thank you for the much needed support you have provided to the Multi-National Corps-Iraq. The 291 Electronic Warfare Officers you sent, adds the missing dimension in our counter-improvised explosive device efforts. Your experts embedded at Battalion through Corps provide the technical expertise to adjust to the ever changing threat. Additionally, their training of our Soldiers and Marines is vital to our mission success and will instill the necessary level of confidence in our CREW Equipment.

Your team is highly motivated and I can assure you I am personally impressed with the enthusiasm and professionalism of your Sailors. The way they have integrated within the Multi-National Corps-Iraq to accomplish the mission is especially inspiring and you can be extremely proud of them. Be assured that I have the utmost confidence in their abilities.

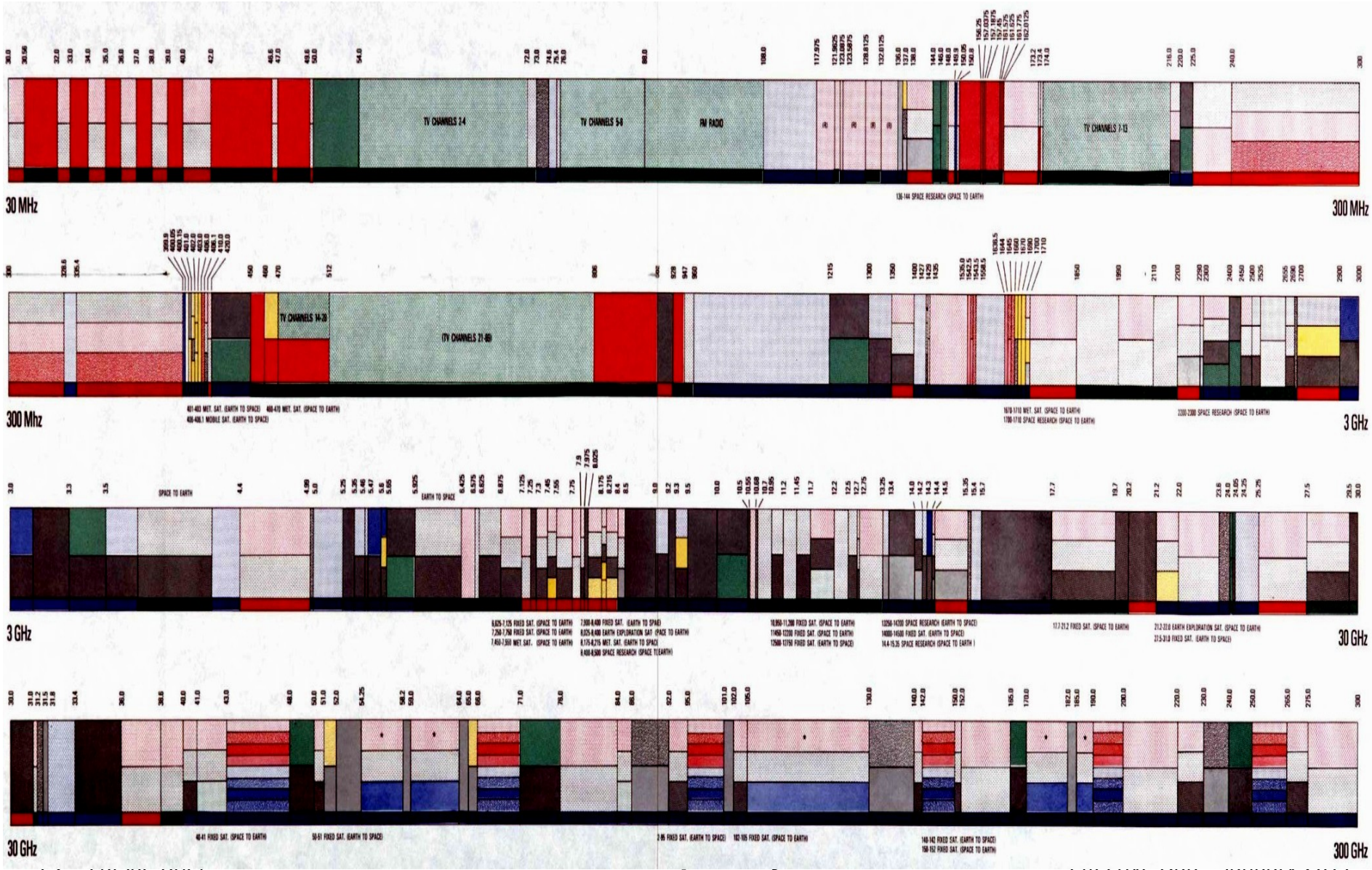
Most important of all is your unselfish support will save the lives of Soldiers, Airmen, Marines and Sailors across the OIF Area of Operations. I can't thank you enough for your enthusiastic support of this most important counter IED initiative.

Sincerely,

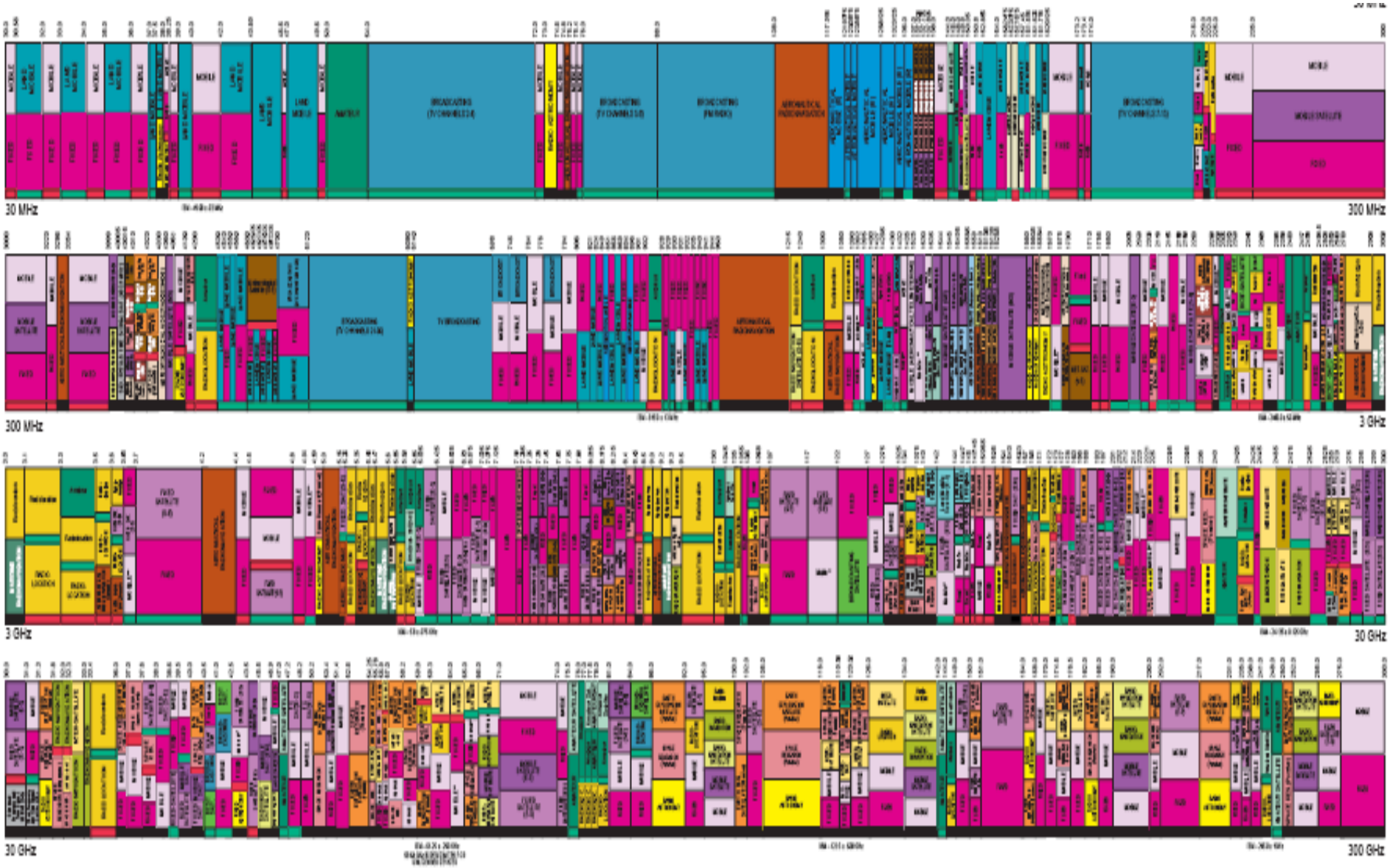
Peter W. Chiarelli
Lieutenant General, US Army
Commanding

I HONESTLY BELIEVE THAT THIS SUPPORT WILL REDUCE CASUALTIES MORE THAN ANY OTHER SINGLE ACTION OF THE LONG WAR.

U.S. Frequency Allocation Table (1975)



U.S. Frequency Allocation Table (2011)



Firm Grasp Of The Environment

Trends

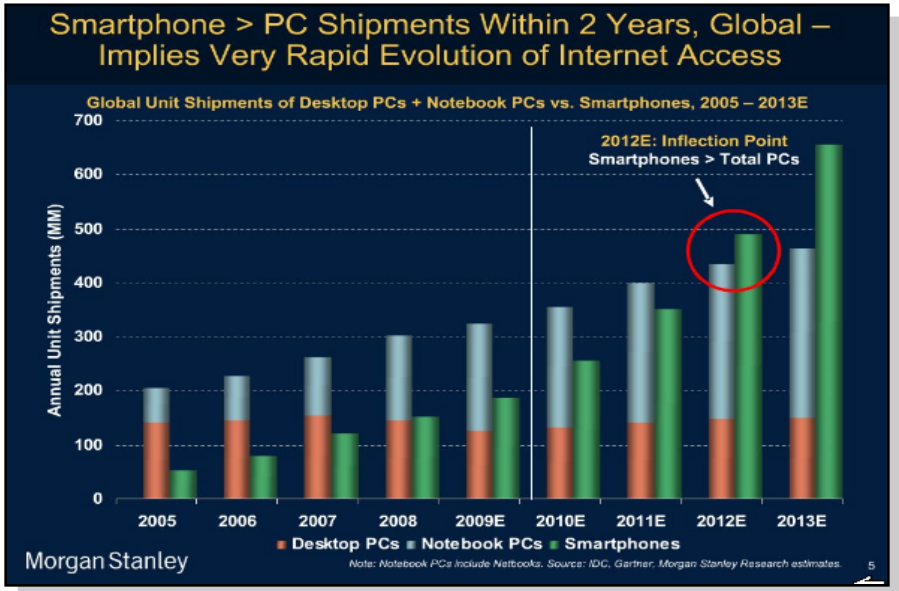
- **Spectrum use growth expected to be 20-45 times 2009 levels by 2016**
- **Explosive growth in Spectrum-dependent systems**
- **Smart phones bypass PC shipments for first time in 2012**
- **DoD requirement for net-centricity**

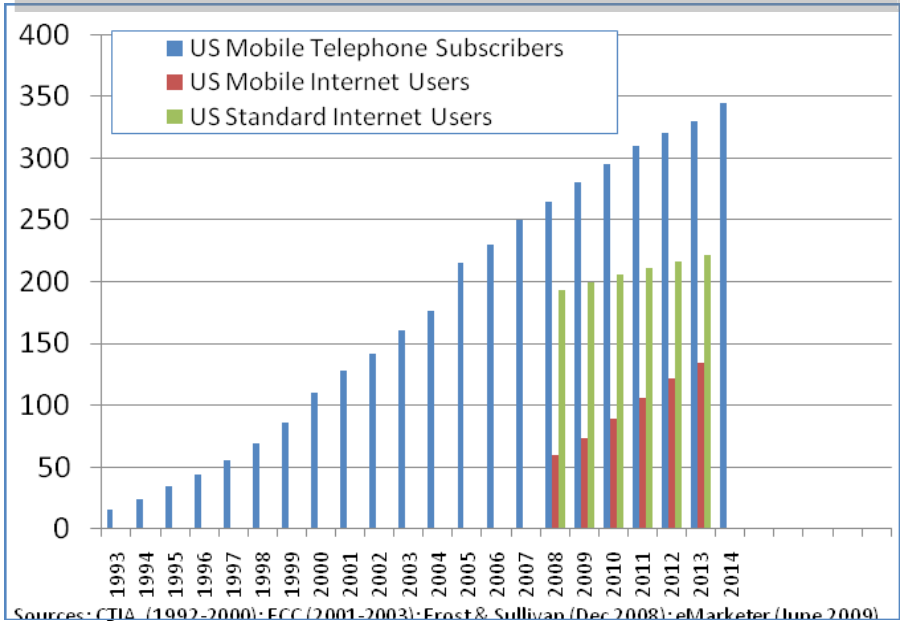
Outlook

- **Dynamic / IP based networks**
- **Dynamic Spectrum Access (DSA)**
- **Cyberspace/EMS Convergence**
  - **IPv6**
  - **4th/5th Generation Cellular**

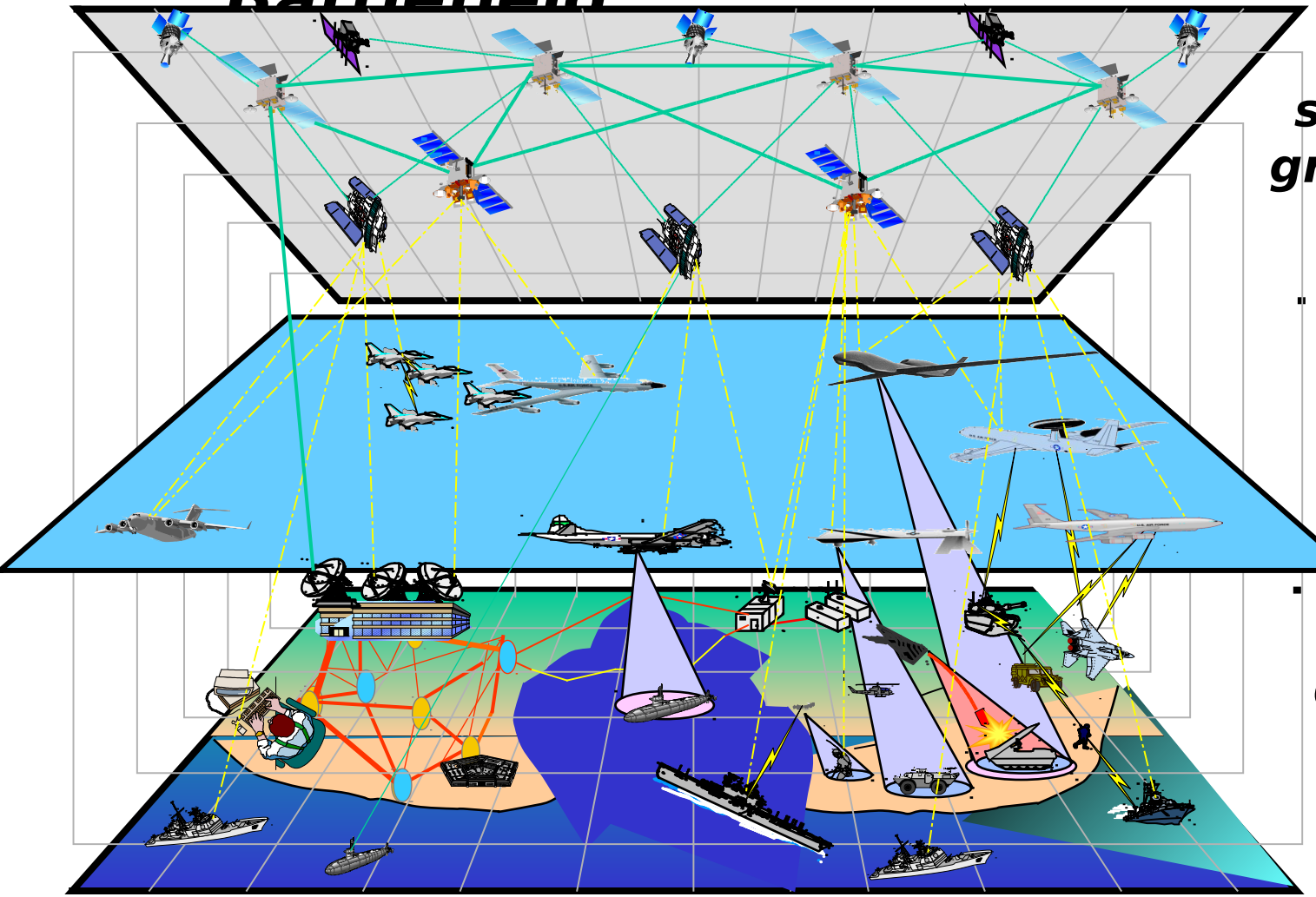
Issues/Challenges

- **Legislation**
- **Lack of clear organizational ownership and mission - policy,**





Spectrum Enables Success on the Battlefield



Integrated space, air and ground systems

Integrated decision-making

Operational superiority

ectrum is the thread that ties together all DoD operations, but t challenges to spectrum access are greater than ever before

Key EMS Legislation and Policy

- **Radio Spectrum Inventory Act (HR 3125 & S 649)**
  - Requires an inventory of radio spectrum bands managed by the National Telecommunications and Information Administration and the Federal Communications Commission.
  - S 649 Introduced by Senator Kerry and 11 Co-Sponsors
  - HR 3125 Introduced by Congressman Waxman and 29 Co-Sponsors
- **Spectrum Relocation Improvement Act of 2009 (HR 3019)**
  - To amend the National Telecommunications and Information Administration Organization Act to improve the process of reallocation of spectrum from Federal government uses to commercial uses.
  - Introduced by Congressman Inslee and 12 Co-Sponsors

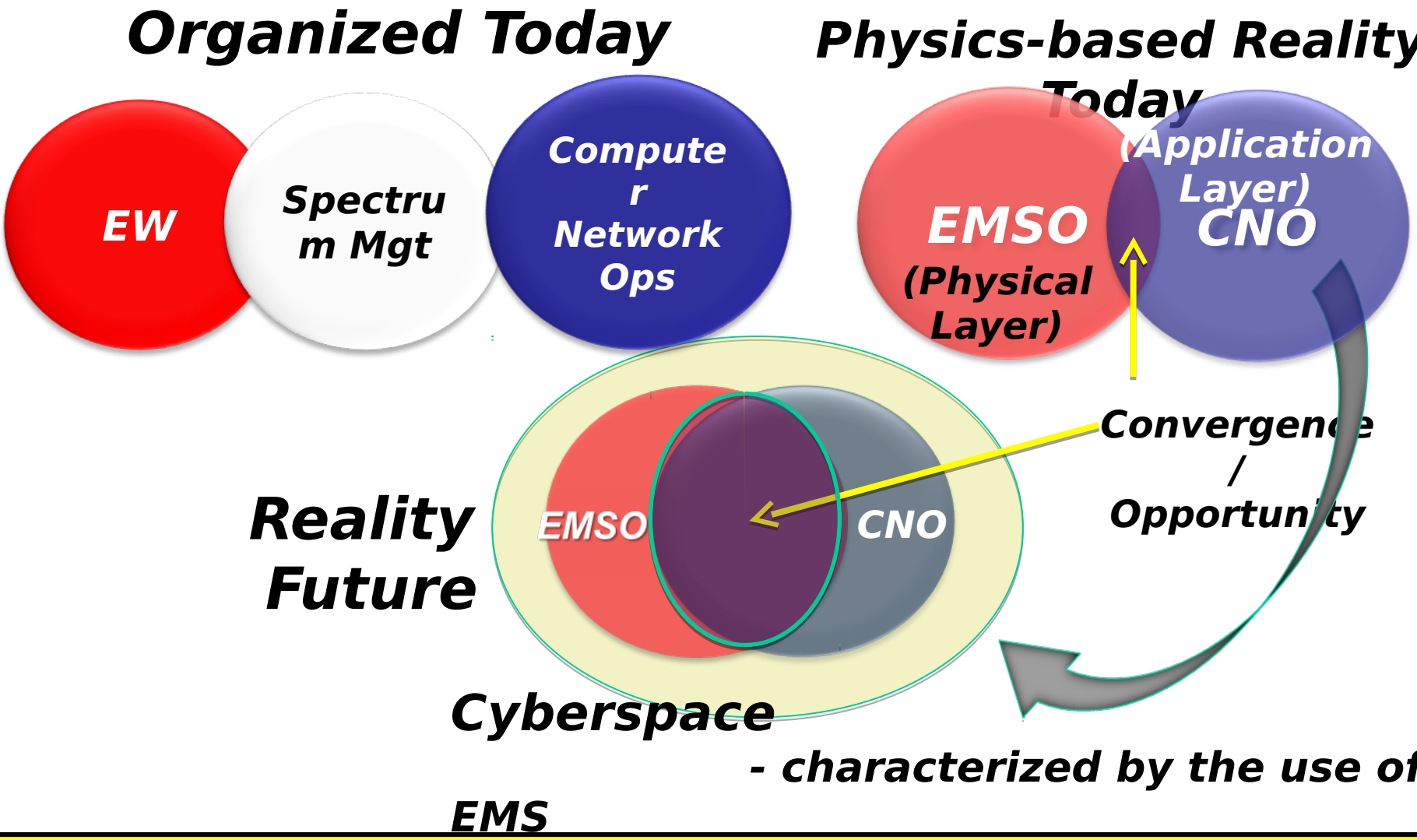
Impact: The intent of both of these bills is to identify spectrum within the NTIA (usually assigned to DoD) for reallocation to the FCC via a spectrum auction. All Federally owned spectrum will be under increased scrutiny from both Congress and the Obama Administration for reallocation to the FCC for the vast amount of revenue generated via the spectrum auction.

Key EMS Legislation and Policy

- **National Broad Band Plan (NBBP)**
  - Design policies to ensure robust competition and, as a result maximize consumer welfare, innovation and investment
  - Ensure efficient allocation and management of assets government controls or influences
  - Reform current universal service mechanisms to support deployment of broadband and voice in high-cost areas
  - Reform laws, policies, standards and incentives to maximize the benefits of broadband in sectors of government influences significantly, such as public education, health care, and government operations
  - ***Transfer of 500mhz from NTIA to FCC***

Impact: Potential immediate impact on warfighting capability as a result of having to reprogram or realign current spectrum within DoD. Increased requirement for DSA technologies as DoD will have less spectrum with an ever increasing spectrum requirement. Spectrum availability/interoperability will be a major concern during the procurement of almost all new systems.

EW/SM/CNO Convergence Zones



CONVERGENCE HIGHLIGHTS CRITICALITY TO OPERATIONS

Lives

JOINT CREW COMPOSITE SQUADRON ONE
SI AEREM MODERARIS VINCIS
FEDERAL COMMUNICATIONS COMMISSION
FCC
USA
U.S. DEPARTMENT OF COMMERCE
NTIA
NATIONAL TELECOMMUNICATIONS & INFORMATION ADMINISTRATION
DISA
Defense Information Systems Agency
Department of Defense
DEFENSE SPECTRUM ORGANIZATION
JOINT SPECTRUM CENTER